Application of the metastable impact electron spectroscopy (MIES), in combination with UPS and TPD, to the study of processes at ice surfaces
A. Borodin, O. Höfft, S. Bahr, V. Kempter and A. Allouche 79
Influences of the incident He^* velocity on metastable de-excitation processes at a Cs-covered Si(1 0 0) surface
T. Ikari, N. Uchino, S. Nishioka, H. Fujiwaki, K. Yamada, A. Watanabe, M. Naitoh and S. Nishigaki 88
Radiation-induced luminescence from sol–gel anatase TiO_2 by 10 keV O^+ irradiation
S.-i. Kitazawa, S. Yamamoto, M. Asano, Y. Saitoh and S. Ishiyama 94

3. Sputtering and Desorption

Energetic electronic processes on extraterrestrial surfaces
R.A. Baragiola 98
Computer simulation of ion surface collisions with special emphasis to the work by Yamamura
W. Eckstein. 108
Monte Carlo simulation studies in Japan on interaction of charged particles with solids during those early days in 1960s–1970s
R. Shimizu 117
TOF-SIMS analysis of ion–water interactions
R. Souda. 125
TOF-SIMS investigation of hydration of acetic acid adsorbed on amorphous water-ice surface
M. Kondo, T. Shibata, H. Kawanowa, Y. Gotoh and R. Souda 134
Influence of helium-ion bombardment on the surface properties of pure and ammonia-adsorbed water thin films
M. Kondo, T. Shibata, H. Kawanowa, Y. Gotoh and R. Souda 140
TOF-SIMS imaging technique with information entropy
S. Aoyagi, Y. Kawashima and M. Kudo 146
Instantaneous surface work function dependence of MCs_n^+ molecular ion emission under varying Cs environments
S. Sarkar and P. Chakraborty 153
Survival coefficient of $Ga(5s^2S_{1/2})$ sputtered from a GaAs surface
S. Tsurubuchi and T. Nimura 159

4. Scattering of Ions, Atoms, Molecules and Clusters

Rainbow scattering under axial surface channeling
H. Winter and A. Schüller 165
TOF measurement of electron volt energy hydrogen atoms reflected by stainless-steel surface
M. Akiyoshi, H. Sakamoto, R. Haraguchi, K. Moritani, I. Takagi and H. Moriyama 173
Vicinage effects in the energy loss of slow LiH molecules in metals
M. Alducin, R. Díez Muiño and A. Salin. 178
Multifragmentation in cluster-surface impact: A shattering event with a common velocity for all outgoing fragments
A. Kaplan, A. Bekkerman, E. Gordon, B. Tsipinyuk, M. Fleischer and E. Kolodney 184
Summary of recent research on gas cluster ion beam process technology
I. Yamada and N. Toyoda 195
Photocatalytic properties of TiO_2 films prepared by O_2 cluster ion beam assisted deposition method
G.H. Takaoka, M. Kawashita, K. Omoto and T. Terada 200
Interactions of argon cluster ion beams with silicon surfaces
G.H. Takaoka, H. Shimatani, H. Noguchi and M. Kawashita 206
Nano structure formation by gas cluster ion beam irradiations at oblique incidence
N. Toyoda, T. Mashita and I. Yamada 212

Mass spectrometric and theoretical studies on the fragmentation mechanisms of hexamethyldigermane and hexamethyldisilane ions in the gas phase
T. Takeuchi, Y. Shirai, T. Matsutani and M. Kiuchi 217
Compositionally graded layer produced by low-energy ionization deposition technique
T. Mano, O. Sugiyama, Y. Shibuya, H. Nakayama and O. Takai 223

5. Highly Charged Ions

Simulation of guiding of highly charged projectiles through insulating nanocapillaries
K. Schiessl, W. Palfinger, C. Lemell and J. Burgdörfer 228
Interaction of slow highly charged ions with the inner surface of nanocapillaries
R. Hellhammer, P. Sobocinski, Z.D. Pešić, J. Bundesmann, D. Fink and N. Stolterfoht. 235
Potential sputtering and kinetic sputtering from a water adsorbed Si(1 0 0) surface with slow highly charged ions
N. Okabayashi, K. Komaki and Y. Yamazaki 244
Secondary ion emission from solid surfaces irradiated with highly charged ions
M. Tona, K. Nagata, S. Takahashi, N. Nakamura, N. Yoshiyasu, M. Sakurai, C. Yamada and S. Ohtani 249
Momentum-imaging spectroscopy of secondary ions from GaN and SiC surfaces collided with highly charged ions at grazing angle
K. Motohashi, S. Tsurubuchi and A. Koukitu 254
SPM observation of nano-dots induced by slow highly charged ions
N. Nakamura, M. Terada, Y. Nakai, Y. Kanai, S. Ohtani, K.-i. Komaki and Y. Yamazaki. 261

6. Characterization of Surfaces

Ion and neutral scattering spectra in LEIS
M. Draxler, P. Zeppenfeld, R. Beikler, E. Taglauer and P. Bauer. 266
The contribution of stable isotopic tracing, narrow nuclear resonance depth profiling, and a simple stochastic theory of charged particle energy loss to studies of the dry thermal oxidation of SiC
I.C. Vickridge, J.J. Ganem, I. Trimaille and J.-L. Cantin. 272
Evaluation of non-resonant background in hydrogen depth profiling via $^{1}H(^{15}N,\alpha\gamma)^{12}C$ nuclear reaction analysis near 13.35 MeV
M. Wilde and K. Fukutani. 280
Investigation of thermal vibration correlation of [1 1 0] silicon lattice atoms by ion scattering
J.-W. Lee 285
Development of low energy neutral atom scattering spectroscopy based on CAICISS operable in gas phase atmosphere
S. Fujii, Y. Michishita, N. Miyamae, K. Oura and M. Katayama 290
Thickness dependence of In content of InGaN mixed films by high-resolution Rutherford backscattering spectrometry
H. Sakuta, Y. Yamanaka, S. Kurai and T. Taguchi 295
Interactions between adsorbed hydrogens and slow positrons on Ni surfaces studied by slow positron beam
I. Kanazawa, T. Wada, Y. Oishi, Y. Terashima, K. Fukutani, Y. Murata, Y. Ito, K. Nozawa and F. Komori. 299
Room-temperature epitaxial growth and in situ CAICISS surface analysis of wurtzite-type thin films
A. Sasaki, W. Hara, A. Matsuda, S. Akiba, N. Tateda and M. Yoshimoto. 305

7. Defect Formation and Surface Modification

Radiation defects in heavy ion-irradiated nickel at low temperature by X-ray diffuse scattering
H. Maeta, N. Matsumoto, T. Kato, H. Sugai, H. Ohtsuka and M. Sataka 312

Electron spin resonance measurement of irradiation defects produced in quartz crystal
K. Moritani, Y. Teraoka, I. Takagi and H. Moriyama 317
Crystallographic analysis of extended defects in diamond-type crystals
S.T. Nakagawa, K. Ikuse, T. Ono, H.J. Whitlow and G. Betz 322
Deuterium trapping near vanadium surface bombarded with hydrogen ions
I. Takagi, N. Matsubara, M. Akiyoshi, K. Moritani, T. Sasaki and H. Moriyama 327
Formation of Cu precipitates by ion implantation and thermal annealing for the growth of oxide nanorods
A. Takeyama, S. Yamamoto, H. Ito and M. Yoshikawa 333
Ni silicide layer formation using low-energy ion beams
N. Tsubouchi and Y. Horino 338
Control of point defects and grain boundaries in advanced materials. Optical properties and diffusion induced by Li doping in ZnO
T. Nakagawa, I. Sakaguchi, K. Matsunaga, T. Yamamoto, H. Haneda and Y. Ikuhara 343
Effect of ion irradiation on the evolution of Pt film morphology
S. Hishita, I. Sakaguchi, N. Ohashi, N. Saito and H. Haneda 348
In vitro and in vivo study of He^+ ion irradiated collagen for development of small diameter stent graft material
Y. Suzuki, M. Iwaki, N. Takahashi, T. Yotoriyama, K. Kurotobi, H. Ujiie and T. Hori 353
Oxidation of tungsten surface with reactive oxygen plasma
A. Romanyuk, V. Melnik and P. Oelhafen 358
Three-dimensional high-performance nano-tools fabricated using focused-ion-beam chemical-vapor-deposition
R. Kometani, T. Hoshino, K. Kanda, Y. Haruyama, T. Kaito, J.-i. Fujita, M. Ishida, Y. Ochiai and S. Matsui 362

Author index 367